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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/373,926	08/12/1999	HO MING LUK	35006-577F01US	3102
76615 7590 12/15/2008 MINTZ, LEVIN, COHN, FERRIS, GLOVSKY AND POPEO, P.C ONE FINANCIAL CENTER BOSTON, MA 02111				
EXAMINER MORGAN, ROBERT W				
ART UNIT		PAPER NUMBER		
3626				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/373,926

Applicant(s)

LUK ET AL.

Examiner

ROBERT W. MORGAN

Art Unit

3626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 November 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 and 45-64 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-41 and 45-64 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/C)
- Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(c), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(c) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/7/08 has been entered.

Notice to Applicant

2. This communication is in response to the amendment filed 11/7/08, the following has occurred: Claims 1, 49, 53, 59 and 60-61 are amended. Claims 1-41 and 45-64 are presented for examination.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

(A) Claims 1-41, 45-48 and 53-64 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Based on Supreme Court precedent¹[1] and recent Federal Circuit decisions, § 101 process must (1) be tied to another statutory class (such as a particular apparatus) or (2) transform underlying subject matter (such as an article or materials) to a different state or thing.²[2] If neither of these requirements is met by

¹[1] *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876).

²[2] The Supreme Court recognized that this test is not necessarily fixed or permanent and may evolve with technological advances. *Gottschalk v. Benson*, 409 U.S. 63, 71 (1972).

the claim(s), the method is not a patent eligible process under 35 U.S.C. § 101. However, claims 1-41, 45-48 and 53-64 does not seem to fall within one of the recognized categories. The method as claimed can be performed in the mind of a user, by paper and pencil, or by a machine. These steps constitute the idea of detecting misrepresentation of policy related information and estimating a quantity corresponding to a set of entities using hierarchical categories. One may not patent a process that comprises every "substantial practical application" of an abstract idea, because such a patent in practical effect, would be a patent of the [abstract idea] itself." *Benson*, 409 U.S. at 71-72, 175 USPQ at 676; *cf. Diehr*, 450 U.S. at 187, 209 USPQ at 8.

The above deficiency can be overcome by expressly stating in the body of the claimed method, using a computer (apparatus) or terminal, for example, which makes the claim useful.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-11, 17-41 and 49-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gopinathan et al., Pat. No. 5,819,226 (hereinafter Gopinathan) in view of Fischthal, Patent No. 5,822,741) and Downs, Sean, "Technology, education aid medical fraud fighting" (hereinafter Downs).

Gopinathan discloses a method for detecting fraud employing predictive modeling techniques. Gopinathan discloses a model development component that uses past data to build a neural network containing information representing learned relationships among a number of

variables (col. 4, lines 46-51). This is the derivation of variables from related information provided. Gopinathan further discloses that the derived variables are applied to the neural network and a fraud score (representing the likelihood of fraud for the transaction) is obtained and compared to a threshold value (col. 4, lines 31-42; col. 28, lines 3-5). This is the model score indicating the relative likelihood of misrepresented information.

Gopinathan also teaches a customer information screen (501, Fig. 5) that includes customer name, account number (policy information), address, etc... (see: column 4 lines 20-25). This information is both policy information and claim information that can be used with a predictive model and a variable derivation process. The claim language does not specify what type of policy and/or claim information that would be used to make the determination.

Gopinathan further discloses a model development component that uses past data to build a neural network containing information representing learned relationships among a number of variables (col. 4, lines 46-51). The neural network model is trained using data describing past transactions from the data network, and then data describing the network model are stored (col. 4, lines 31-42). Once the model description is stored, the system is able to process current transactions.

Gopinathan also discloses a model development component that uses past data to build a neural network containing information representing learned relationships among a number of variables (col. 4, lines 46-51). The neural network model is trained using data describing past transactions from the data network, and then data describing the network model are stored (col. 4, lines 31-42). Once the model description is stored, the system is able to process current transactions. The model then determines a fraud score and reason codes, which are output to the

user, or to a database, or to another system via output device. Gopinathan further discloses a method of calculating the fraud rate score and then comparing this score to a threshold value (col. 28, lines 3-5). This threshold value is then used to determine if the transaction is approved.

Gopinathan does not explicitly disclose that the predictive model is employed in insurance transactions.

However, Fischthal discloses a neural network for detecting fraud in insurance transactions (col. 4, lines 62-66). The motivation to use such a neural network was to manage large amounts of data and to quickly and efficiently perform the difficult and tedious tasks that are required to be performed by human experts (see: Fischthal, col. 4, lines 17-25). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to include the neural network for detecting fraud in insurance transactions as disclosed by Fischthal within the neural network predictive model of Gopinathan for the motivation stated above.

Gopinathan does not explicitly disclose that the higher fraud score is used to increase insurance premiums.

However, Gopinathan discloses that the increased fraud score is used to characterize, classify, and order SIC Codes as well as to represent the likelihood of fraud for each transaction (col. 26, lines 60-64). Furthermore, Downs discloses paying the high cost of fraud in the form of increased premiums. The motivation for this is to compensate insurance carders for losses due to fraudulent claims (page 1, column one, paragraph 1). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to include that the higher fraud score is used to increase insurance premiums as disclosed by Downs within the Gopinathan and Fischthal combination for the motivation stated above.

5. Claims 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gopinathan, Fischthal, and Downs as applied to claim 1 above, and further in view of Prezioso, Patent No. 5,724,488.

Gopinathan, Fischthal and Downs disclose the method of claim 1.

Gopinathan, Fischthal and Downs do not explicitly disclose determining a plurality of peer groups of which the selected policy is a member; and

- for each peer group, deriving variables from the policy which attribute characteristics of the peer group or set of peer groups to the selected policy or which compare the selected policy to other policies of the peer group.

However, Prezioso discloses a hierarchical ordering of categories with which to determine a quantity corresponding to a set of behaviors, that are entities, the entities being different indicators that fraudulent behavior is occurring (col. 8, lines 18-28, lines 50-59). The motivation for this is to determine a behavior profile comprising a large number of behavior characteristics for entities to be used to detect abnormal or dissimilar behavior (col. 2, lines 4-15 and lines 29-43). Prezioso further discloses identifying the behavior within a peer group that indicates that the target behavior is compatible with the peer group. It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to include determining a plurality of peer groups of which the selected policy is a member and for each peer group, deriving variables from the policy which attribute characteristics of the peer group or set of peer groups to the selected policy or which compare the selected policy to other policies of the peer group as disclosed by Prezioso within Gopinathan, Fischthal and Downs for the motivation stated above.

6. Claims 45-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gopinathan in view of Prezioso.

Gopinathan discloses a method for detecting fraud employing predictive modeling techniques. Gopinathan discloses a model development component that uses past data to build a neural network containing information representing learned relationships among a number of variables (col. 4, lines 46-51).

Gopinathan does not explicitly disclose set of entities corresponding to a hierarchical ordering of categories.

Prezioso discloses a hierarchical ordering of categories with which to determine a quantity corresponding to a set of behaviors, which are entities, the entities being different indicators that fraudulent behavior is occurring (col. 8, lines 18-28, lines 50-59). The motivation for this is to determine a behavior profile comprising a large number of behavior characteristics for entities to be used to detect abnormal or dissimilar behavior (col. 2, lines 4-15 and lines 29-43). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to include a set of entities corresponding to a hierarchical ordering of categories as disclosed by Prezioso within Gopinathan for the motivation stated above.

6. Claims 53-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gopinathan in view of Fischthal, Downs, and Werstein Hann, Leslie, "High-Tech Sleuths" (hereinafter Hann).

Gopinathan discloses a method for detecting fraud employing predictive modeling techniques. Gopinathan discloses a model development component that uses past data to build a neural network containing information representing learned relationships among a number of

variables (col. 4, lines 46-51). This is the derivation of variables from related information provided. Gopinathan further discloses that the derived variables are applied to the neural network and a fraud score (representing the likelihood of fraud for the transaction) is obtained and compared to a threshold value (col. 4, lines 31-42; col. 28, lines 3-5). This is the model score indicating the relative likelihood of misrepresented information.

Gopinathan also teaches a customer information screen (501, Fig. 5) that includes customer name, account number (policy information), address, etc... (see: column 4 lines 20-25). This information is both policy information and claim information that can be used with a predictive model and a variable derivation process. The claim language does not specify what type of policy and/or claim information that would be used to make the determination.

Gopinathan further discloses a model development component that uses past data to build a neural network containing information representing learned relationships among a number of variables (col. 4, lines 46-51). The neural network model is trained using data describing past transactions from the data network, and then data describing the network model are stored (col. 4, lines 31-42). Once the model description is stored, the system is able to process current transactions.

Gopinathan also discloses a model development component that uses past data to build a neural network containing information representing learned relationships among a number of variables (col. 4, lines 46-51). The neural network model is trained using data describing past transactions from the data network, and then data describing the network model are stored (col. 4, lines 31-42). Once the model description is stored; the system is able to process current transactions. The model then determines a fraud score and reason codes, which are output to the

user, or to a database, or to another system via output device. Gopinathan further discloses a method of calculating the fraud rate score and then comparing this score to a threshold value (col. 28, lines 3-5). This threshold value is then used to determine if the transaction is approved.

Gopinathan does not explicitly disclose that the predictive model is employed in insurance transactions.

However, Fischthal discloses a neural network for detecting fraud in insurance transactions (col. 4, lines 62-66). The motivation to use such a neural network was to manage large amounts of data and to quickly and efficiently perform the difficult and tedious tasks that are required to be performed by human experts (see Fischthal, col. 4, lines 17-25). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to include the neural network for detecting fraud in insurance transactions as disclosed by Fischthal within the neural network predictive model of Gopinathan for the motivation stated above.

Gopinathan does not explicitly disclose that the higher fraud score is used to increase insurance premiums.

However, Gopinathan discloses that the increased fraud score is used to characterize, classify, and order SIC codes as well as to represent the likelihood of fraud for each transaction (col. 26, lines 60-64). Furthermore, Downs discloses paying the high cost of fraud in the form of increased premiums. The motivation for this is to compensate insurance carders for losses due to fraudulent claims (page 1, column one, paragraph 1). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to include that the higher fraud score is used to increase insurance premiums as disclosed by Downs within the Gopinathan and Fischthal combination for the motivation stated above, Gopinathan does not explicitly disclose

defining an audit action for performing on policies which have a score exceeding a threshold value but not exceeding a next greater threshold value.

However, Hann discloses defining an audit action for performing on policies which have a score exceeding a threshold value but not exceeding a next greater threshold value (i.e. system alerts adjusters to claims that score 500 or more and claims that hit 800 are automatically referred to a special investigator) (page 2, column 3). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to include defining an audit action for performing on policies which have a score exceeding a threshold value but not exceeding a next greater threshold value as disclosed by Hann within the Gopinathan, Fischthal and Downs combination for the motivation of using a software tool that helps identify cases that are most likely to be fraudulent (page 2, column 3).

Response to Arguments

7. Applicant's arguments filed 11/7/08 have been fully considered but they are not persuasive. Applicant's arguments will be addressed hereinbelow in the order in which they appear in the response filed 11/7/08.

In response to Applicant's argument, it is respectfully submitted that the Examiner has applied new passages and citations to amended claims 1, 49, 53, 59 and 60-61 at the present time. The Examiner notes that amended limitations were not in the previously pending claims as such, Applicant's remarks with regard to the application of Gopinathan, Fischthal, Downs Prezioso and/or Hann to the amended limitations are addressed in the above Office Action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT W. MORGAN whose telephone number is (571)272-6773. The examiner can normally be reached on 9:00 a.m. - 5:30 p.m. Mon - Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, C. Luke Gilligan can be reached on (571) 272-6770. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Robert Morgan/
Primary Examiner, Art Unit 3626